Python Web Application: Chatbot System for USCIS Manual

Objective:

Create a Python web application that acts as a chatbot system, designed to answer questions based on the contents of the provided USCIS manual. The application should allow users to interact with the chatbot through a user-friendly interface. The chatbot should retrieve answers using the provided document as a source.

Deliverables:

- A GitHub repository containing the code and a `README.md` file with detailed instructions on how to run the application.
- The application should be runnable on a regular machine, even if it may be slow on a CPU. No need to optimize for GPU usage.

Technologies to be Used:

- **Python:** Version 3.8 or above.
- **LLama 3.1:** 8B model.
- **Ollama (Optional):** For model management and serving.
- **LangChain:** For integrating language models into the chatbot.
- **Vector Database:** To store document embeddings for efficient retrieval (e.g., FAISS, Pinecone).
- **Streamlit:** For building the User Interface (UI).
- **RAG (Retrieval-Augmented Generation):** To enable the chatbot to retrieve answers from the document.

Additional Guidelines:

- **YouTube Resources:** Feel free to watch YouTube videos as reference material during the development process.
- **Generative AI Tools:** It is acceptable to use generative AI tools like ChatGPT to assist in completing this task.

Raising the Bar:

- **Advanced Task:** Include instructions and code for creating a new model that can answer questions without using the provided document in real-time. This involves adding the document's contents as weights to the model. The emphasis here is on the methodology and code implementation; you do not need to run or test the new model, as GPU costs are acknowledged.

Instructions for Submission:

1. Upload the code to a GitHub repository.
2. Include a `README.md` file with the following details:
    - **Setup Instructions:** How to install the necessary dependencies.
    - **Running the Application:** How to start the chatbot on a local machine.
    - **Technology Overview:** Brief descriptions of the tools used.
    - **Advanced Task Documentation:** If you attempt the advanced task, document the approach and the methodology for adding the document contents as model weights.

Good luck with the exercise!